

Our Ref: JP/T16592-NHDC01.let
Your Ref:

25 November 2016

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Dear Mr Ellis

**Planning Application Ref. 16/01713/1
Land at Roundwood, Back Lane, Graveley**

I write to you on behalf of Weston Parish Council, Graveley Parish Council and Great Ashby Community Council in support of their objection to the above development proposal.

I am the founding Director of PTB Transport Planning Ltd which has been in business since 2006, and have nearly 20 years experience in the transport planning field.

I have audited the Transport Assessment (TA) report, dated May 2016, prepared by Wormald Burrows Partnership Limited (WBP Ltd) in support of the planning application and have identified several fundamental issues with the assessment work undertaken, relating to:

- Consideration of the Existing Highway Network;
- Development Traffic Distribution and Assignment;
- Junction Capacity Modelling;
- Traffic Impact; and
- Construction Traffic and Access.

These issues are set out below and, in my view, demonstrate significant flaws in the assessment work undertaken by WBP Ltd.

As a result, I will demonstrate that it is not possible to make an informed decision regarding the impact of the proposed development on the highway network based on the assessment work contained in the submitted WBP Ltd TA report.

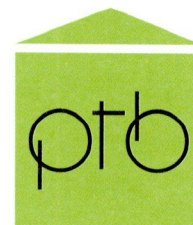
Furthermore, in respect of paragraph 32 of the National Planning Policy Framework (NPPF), my view is that the impact of the development proposal is likely to be 'severe' taking into account certain aspects of the site from a highways/transport perspective.

Consideration of the Existing Highway Network

The WBP Ltd report states in paragraph 3.2.3 that Back Lane *"narrows to a single lane in certain places to the west of the site."*

This is a significant understatement of the actual situation as Back Lane heads westwards, connecting the site with Graveley, the B197 and (eventually) the A1(M).

In reality, most of Back Lane is single lane, with vehicles being required to either utilise existing field and property entrances, or to run across verge (where available) in order to



pass each other. There is clear evidence within the verges along the entire length of Back Lane that such manoeuvres are required on a regular basis. In addition, paragraph 3.2.3 makes absolutely no mention of the many blind bends that occur along Back Lane to the west of the site, some of which are also further constrained by building frontages at the edge of highway.

Paragraph 3.2.4 states that Calder Way is a narrow road that “does not readily allow vehicles travelling in opposite directions to pass each other.”

Again, this is a significant understatement of the actual situation, as observations of the operation of Calder Way quite clearly demonstrate that vehicles do not pass at all along its length, instead waiting at either end until the entire length of carriageway is clear. In effect, it is a 230m long ‘give-way shuttle’ arrangement between Orwell Avenue and Back Lane, often resulting in significant queues at each end, particularly during peak periods.

None of the above is noted by WBP Ltd within their report.

Development Traffic Distribution and Assignment

Traffic Distribution/Assignment

Paragraphs 8.5.13 to 8.5.18 detail the methodology and results of the development traffic distribution.

WBP Ltd appears to have based their trip (traffic) distribution on a count of the adjacent residential area access from Mendip Way and Bray Drive, along with a count of the Great Ashby Way/Mendip Way roundabout.

It should be noted that this is **not a distribution and assignment**, as it fails fundamentally to give any consideration to potential journey destinations, or to the available/likely preferred routes that would be used to undertake those journeys. It is merely an assignment based on a localised traffic count that indicates turning movements at some of the junctions close to the site.

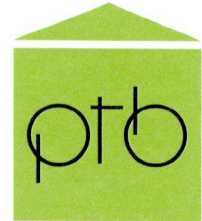
In addition, the localised traffic count is taken from residential areas with no direct access to Back Lane or Weston Road; whereas the proposed residential development will have an access junction to both of these routes.

Therefore, the resulting traffic flows that are based on the distribution within the WBP Ltd TA report, in drawings E3518/807/B and E3518/808/B must be treated with a significant degree of caution.

Analysis of those flows indicates that in the AM peak hour, just 2.5% of the outbound traffic is indicated to use Back Lane to the west of the site; with 8.2% indicated to use Weston Road to the east/north of the site. In the PM peak hour, the percentages are 3.3% and 4.9% respectively.

However, as per my comment above, this takes no account of the fact that there will be a direct access onto both of these routes for the proposed development traffic; nor does it consider the ‘2015 Existing Surveyed Flows’ which, particularly in the AM peak hour, suggest a much more intensive use of Back Lane and Weston Road.

As stated above, Calder Way essentially operates as a 230m long ‘give-way shuttle’ arrangement with queues and delays, particularly during peak hours.



However, when considering the 2015 AM peak surveyed traffic flows, it should be noted that at the junction of Great Ashby Way with Orwell Avenue, the two ahead movements total 671 vehicles; but a further 223 vehicles turn up Orwell Avenue, the vast majority of which then turn up Calder Way (to Back Lane and Weston Road).

At this junction, approximately 25% of the traffic, despite not having direct access and despite the constraints of Calder Way in terms of its width and operation, still chooses to route via Back Lane and Weston Road.

It is quite clear, from observations of the highway network further west and south into Stevenage during peak periods, that despite their narrow width and single lane operation, traffic is seeking to utilise Back Lane and Weston Road to avoid congestion and delay within the wider urban area of Stevenage to the south of the proposed development site.

Turning to the distribution and assignment itself, it is normal practice for this to be based on Census data for the zones surrounding (or containing) a proposed development site, such as Journey to Work (JTW) data from the 2011 Census, which is readily available (free of charge) on the ONS Nomis website.

Given the discrepancies highlighted above, I have undertaken this analysis which is appended to this letter.

To summarise, the 2011 Census JTW data suggests that 59% of the proposed development traffic would utilise Great Ashby Way, 37% would utilise Back Lane, and 4% would utilise Weston Road. The development traffic has been assigned to the network based on the routing software within Google Maps, for the morning peak period, which takes account of the typical peak period congestion and delays on the highway network throughout Stevenage.

Even if it was assumed that only 50% of the traffic heading south from the Stevenage area was to utilise Back Lane (instead of travelling through Stevenage), this would still result in 27% of the development traffic routing via Back Lane through Graveley; the result would be an additional 54 two-way AM peak vehicle trips, and 51 two-way PM peak vehicles trips.

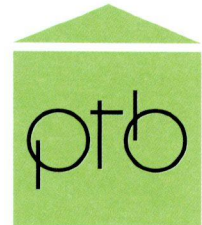
This compares to just 2.5% doing so in the AM peak hour and 3.3% in the PM peak hour within the WBP Ltd trip distribution, which represents 4 vehicle trips in each peak hour.

Therefore, it is quite clear that the WBP Ltd trip distribution is fundamentally flawed and substantially underestimates the level of development traffic that will use Back Lane, by a factor of almost 14.

Committed Development Flows

It should also be noted that the above issue with respect to the level of traffic predicted to use Back Lane, equally applies to the committed development traffic flows associated with the Tile Kiln site in Great Ashby.

WBP Ltd state that they have assigned the school traffic to the morning peak hour as it provides a more robust assessment than the proposed 500 dwelling residential development, and that the PM peak hour uses the residential development for analysis purposes.



However, whilst there is merit in this approach in terms of the traffic generation in each peak hour, the traffic flows shown on Drawings E3518/809 and E3518/810 woefully underestimate the level of traffic that is likely to use Back Lane (and Weston Road) once an appropriate distribution and assignment is applied.

In the AM peak hour, WBP Ltd suggest that just three vehicles will utilise the new Haybluff Drive link to Back Lane/Weston Road; whilst in the PM peak hour, they assign no traffic at all to/from this direction.

As highlighted above, despite not having direct access and despite the constraints of Calder Way, the 2015 surveyed counts demonstrate that a significant proportion of traffic chooses to route via Back Lane and Weston Road.

It should be noted that the draft allocation for site GA2 (Tile Kiln) is actually 600 dwellings; the traffic generation associated with this residential development at the Tile Kiln site will be 330 and 312 movements, two-way, in the AM and PM peak hours respectively. Even if just the 27% assigned via Back Lane (as per my previous calculation), this would result in an additional 89 and 84 two-way traffic movements along Back Lane in the AM and PM peak hours respectively.

It is quite evident that, alongside the proposed Roundwood development, the Tile Kiln development site would also be likely to generate significant additional traffic movements along Back Lane.

WBP Ltd has not taken this into account in their analysis.

Traffic Redistribution

It is also noted in paragraphs 8.5.20 to 8.5.26 that WBP Ltd set out a redistribution analysis due to the extension of Haybluff Drive to join Weston Road and the development site itself.

Paragraph 8.5.23 sets out that the redistribution percentages have been based on the ratio of average queue lengths surveyed on the Orwell Avenue and Bray Drive approaches to Great Ashby Way during the morning peak.

This analysis simply does not make sense – it takes no account of highway network delay, either at the two junctions indicated, or along the links between them and the proposed development site.

A more appropriate method of assessment would have been to undertake several journey time surveys from both the northernmost point of Haybluff Drive, and also from Back Lane (at the junction with Calder Way), to a single defined destination to the southwest of Orwell Avenue – for example, the Great Ashby Way/Canterbury Way roundabout junction.

These journey time surveys would have provided a clear empirical measure of the comparative desirability of the two routes once the Haybluff Drive connection is made; rather than the assessment undertaken by WBP Ltd, which has been based on assumptions with respect to expected queues (but no mention of delays), the width of Calder Way and the notion that certain routes will be “shorter”.



Fundamentally, the redistribution effect of the Haybluff Drive connection onto Weston Road needs a full and proper assessment before an estimation of the level of traffic that will realistically redistribute can be made.

Further to this, it is also important to note that if the Haybluff Drive connection onto Weston Road is considered alongside my traffic distribution and assignment, which suggests significantly more traffic utilising Back Lane than estimated by WBP Ltd, it might even be possible that even more traffic from the adjacent residential areas would then decide to utilise Back Lane and Weston Road as an alternative route to Great Ashby Way, given this new and direct connection.

The traffic redistribution undertaken by WBP Ltd doesn't take account of any suppressed demand for such journey routing that might be apparent in the area; however, this is almost certainly because their distribution analysis fails to take account of any routing strategies, having been based on localised junction turning count data (as indicated earlier).

Junction Capacity Modelling

Chapter 3 of the WBP Ltd TA report details the modelling methodology used to test the existing traffic conditions across the highway network, indicating that the base models were validated by comparing the results to the queue surveys undertaken at the time of the turning counts.

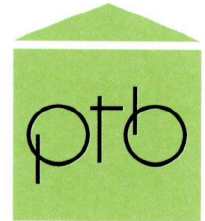
Paragraph 3.6.21 states that the average recorded queue length at the B197 High Street junction with Church Lane in Graveley was 2.7 vehicles in the AM peak hour; notwithstanding the fact that it is exceptionally difficult to accurately measure average queue lengths at any junction, particularly using just one day of survey to do so, WBP Ltd state that they have tried to provide a validated model by reducing Church Lane to the minimum width allowed, by removing the lane's flare and by substantially reducing the visibility in the model.

It should be noted that Church Lane does not have a flare – it is simply not possible for two vehicles to sit alongside one another at the give way line and observations of the junction during peak periods demonstrates that this does not occur.

The visibility at the junction also has only a marginal effect on the actual capacity of the minor arm.

If WBP Ltd wanted to calibrate their base model for the existing situation, this should have been done through detailed observations of the junction which could then take into account local circumstances; and most importantly, allow the calibration to take account of the realistic delay at the junction during peak periods. It is a relatively simple exercise to take samples of vehicle delay entering a junction from the non-priority approach arm during peak periods; rather than providing a detailed average calculation of such delay (which as with queues would be difficult given the limited sample size), these observations would then feed into the calibration by looking at the modelled delay and using engineering judgement to determine whether or not the base model is providing a realistic assessment of the existing situation.

Even without going through a detailed 'site specific capacity correction' exercise, the intercept correction can be adjusted within the model to reduce the capacity of Church



Lane to a point where the delays on this approach are more realistic and appropriate for the local conditions observed at the junction.

WBP Ltd state in paragraph 3.6.22 that a three vehicle queue was recorded at the start of the survey at 07:00 and that therefore the queue recorded in the AM peak hour was grossly affected by residual queueing from an incident occurring before 07:00.

This conclusion simply does not make sense; firstly, there is nothing to suggest that a queue of three vehicles at 07:00 is anything unusual at this junction – in fact, the traffic count data quite clearly demonstrates that the total traffic flow through this junction between 07:00 and 08:00 is 1200 vehicles, which is almost as high as during the modelled period between 08:00 and 09:00 at 1277 vehicles. Therefore, to suggest that a residual queue from an incident prior to the start of the surveyed period, that “*grossly affected*” the survey for the remainder of the period, is totally unfounded. Based on the observed traffic flows, it is more likely that this situation is normal and a regular occurrence at this junction.

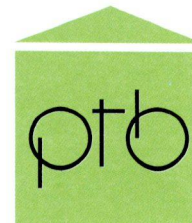
Secondly, if WBP Ltd suggest that a residual queue at 07:00 significantly impacts the observed queue at the junction during their peak hour of 08:00-09:00, then they must also be accepting that the queue isn't actually able to clear sufficiently during this time, which itself indicates that despite the relatively low levels of queueing observed, the delay to side traffic is quite significant. As indicated above, there is no mention of delay within the WBP Ltd report.

Traffic Impact

Chapter 9 of the WBP Ltd TA report details the traffic impact of the proposed development on the highway network, as determined by the peak hour junction modelling undertaken.

There are a number of issues with the modelling results provided in this chapter, as follows:

- It is not possible to determine whether the results for the 'Existing 2015' scenario have been realistically calibrated to the current network operation at these locations, as queue data has not been provided for any of the junctions except the B197 High Street/Church Lane and Back Lane/Calder Way (provided in Appendix F to the TA report), despite indications in Chapter 3 that all of the models were validated.
- Table 10C suggests that the queue length in the AM peak 'Existing 2015' scenario at Orwell Avenue (on the approach to Great Ashby Way) is 0.4 vehicles; yet, WBP's own statement in paragraph 8.5.23 is that the average queue length surveyed on Orwell Avenue during the morning peak is 3.5 vehicles. Notwithstanding my comment above in relation to the measurement of average queue lengths, this demonstrates a clear discrepancy in the modelling undertaken for this junction and subsequently brings into question the base models of the other junctions assessed.
- There is no delay data provided in any of the tables, from which it would be possible to determine (using engineering judgement) whether or not the junctions model calibrate well to the existing highway network conditions in the vicinity of the site during peak hours.
- It is surprising that the Orwell Avenue junction with Calder Way has not been included within the assessments undertaken – observations of this junction during the peak



periods suggests that there are existing capacity issues here, related not only to the operation of Calder Way (as a give-way shuttle), but also the geometry of the junction itself which is constrained such that any vehicles larger than two cars attempting to pass at the southern end, can only do so at very slow speed and with difficulty, particularly so when vehicles are queuing along Orwell Avenue waiting for the traffic travelling south on Calder Way to clear.

Given the above, I do not consider that a full and correct assessment of the development on the local highway network has been undertaken and, as such, the impact of the proposals has not been addressed.

When this is taken into account alongside the issues relating to the traffic distribution and assignment, it is my view that the capacity analysis undertaken cannot be relied upon to form a view in respect of the traffic impact of the proposed residential development.

Section 9.3.5 states that there will only be a 3.5% increase in traffic through Graveley and that the impact on the Church Lane junction with the B197 High Street will be negligible; as set out above, I do not consider that this is realistic, and believe the level of development traffic likely to use the route through Graveley is grossly underestimated.

Construction Traffic and Access

Realistically, construction traffic for the proposed development site can only utilise one route prior to extension of Haybluff Drive, and that is via Orwell Avenue and Calder Way.

Therefore, all construction traffic for the potential build-out period of eight years, would have to travel through the informal give-way shuttle arrangement along Calder Way; there is no realistic alternative access into the site for construction vehicles due to the narrow width of Back Lane and Weston Road.

I have already raised above concerns in respect of the operation of Calder Way and its junction with Orwell Avenue, due to the tight layout of the junction. The temporary removal of the traffic calming on Calder Way will not resolve this situation.

However, there are further operational concerns that are also important to note; observations of this part of the highway network show that any large vehicle that uses Calder Way has a significant impact on the junction with Orwell Avenue and subsequently the operation of the Orwell Avenue junction with Great Ashby Way.

WBP Ltd state that the levels of construction traffic are negligible in relation to the final predicted development flows; however, whilst they have indicated that there would typically be 10 to 15 large HGVs per day at the height of operations (please note that would translate into 20 to 30 two-way movements), they make no reference to the transit vans and vehicles associated with the construction workers. We have previously used information from a housebuilder that puts the number of employees and contractors at the height of construction of a typical residential development at around 100; clearly, some of these will arrive together, but many will arrive in their own vehicle transporting tools and materials.

Therefore, one might expect somewhere in the region of 75 daily vehicle arrivals and departures associated with employees/contractors at the height of the build programme; given the constraints of Calder Way and Orwell Avenue, which I do not consider have been



assessed adequately (as stated above), there are likely to be further operational issues that should have been addressed within the TA report.

This is particularly important given that the Haybluff Drive link will not be open during the construction period.

Summary

It is clear that there are outstanding and significant issues within the submitted WBP Ltd TA report.

The assessment undertaken is flawed in a number of respects, relating to traffic distribution and assignment, model calibration and capacity analysis, and the (albeit temporary) impacts during the construction period.

Furthermore, the impact of a significant committed development at the Tile Kiln site has not been realistically addressed either.

The above issues undermine the assessment of the proposed development site from a transport perspective, and particularly in relation to the impacts on Back Lane (and to a lesser extent on Weston Road), where I believe the level of additional development traffic that is likely to use the lane has been grossly underestimated.

The WBP Ltd TA report suggests that the development proposals at Roundwood and Tile Kiln (some 960 dwellings) will result in only 7 vehicles utilising Back Lane in the morning peak hour, and 4 vehicles in the evening peak hour.

My view, based on analysis using 2011 Census Journey to Work data and taking into account existing traffic movements in the area (which demonstrates that there is demand for this route), is that these two residential developments could quite comfortably create an additional 143 and 135 two-way vehicle trips along Back Lane in the morning and evening peak hours. I consider that this is unacceptable given the constraints along this route and at the junction of Church Lane with the B197 High Street in Graveley.

My overall conclusion is that it is not possible to make an informed decision regarding the impact of the proposed development on the highway network based on the assessment work contained in the submitted WBP Ltd TA report.

Furthermore, in respect of paragraph 32 of the National Planning Policy Framework (NPPF), my view is that once a more realistic and appropriate assessment is undertaken, the impact of the development proposal on Back Lane and through Graveley is likely to be 'severe', given the significant width and visibility constraints along the route, and taking into account a realistic assessment of the existing operation of the Church Lane junction with the B197 High Street.

I trust that you will take the above issues into account when making your decision in respect of the proposed development site.

Please do not hesitate to contact me if you have any queries or require clarification on any of the issues highlighted in this letter.



Yours sincerely

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Encs.